

REMARKS

Claims 1-5 and 7-17 are currently pending, wherein claims 1 and 10 have been amended to even more clearly define the invention, and claim 15 has been amended to correct a typographical error. Applicants respectfully request favorable reconsideration in view of the above-identified amendments and the remarks presented herein below.

At the outset, Applicant would like to thank Examiner Akhavannik and Supervisory Examiner Boudreau for the courtesy of the personal interview on Tuesday, July 15, 2003. Applicant respectfully submits that the following is an accurate summary of the interview.

At the outset, Applicants' representative discussed the distinction between the method of present invention for *evaluating* detected fabric faults and known systems for *detecting* fabric faults. More specifically, Applicants' representative discussed the fact that the present invention provides a method by which fault data associated with a plurality of detected faults acquired from textile fabrics can easily be compared with one another and evaluated as to their significance in a differentiated manner. In contrast to the system of Leuenberger which only collects data on fabric faults, i.e., there is no evaluation of comparison between the detected faults. Examiner Akhavannik acknowledged that the applied prior art did not disclose a system which categorized or sorted a plurality of defaults and displayed the categorized fault data as shown in Figs. 3-11 of the present invention. However, he asserted such a feature was not clearly recited in the claims.

Although Applicants disagree with the Examiner's assertion that the above-identified features (i.e., a system which categorizes or sorts a plurality of defects and displays the *categorized* defects) are not clearly recited in the claims, in order to expedite prosecution of the present application, Applicants have amended independent claims 1 and 10 to even more clearly define the invention.

In paragraph 4, the Office Action objects to claim 15 because of a typographical error. Claim 15 has been amended, thereby addressing the Examiner's concerns.

In paragraph 6, the Office Action rejects claims 1-5 under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,100,989 to Leuenberger ("Leuenberger"). Applicants respectfully traverse this rejection.

Independent claim 1 defines a method of evaluating or classifying information on detected fabric faults. As amended, the method of claim 1 includes, among other features, the steps of receiving data associated with a plurality of detected faults, said faults having been detected on the surface of a swatch of fabric; sorting the data associated with the plurality of detected faults according to at least two parameters included in said data; and representing the plurality of detected faults in an image as a function of the at least two parameters.

Leuenberger discloses a method and device for detecting defects in textile fabrics which can be adapted to widely varying textile webs. According to the method of Leuenberger, the web (i.e., fabric) is scanned by a camera which supplies values for the brightness or intensity of scanning points or partial areas of the web to a memory. These values are then retrieved in parallel from the memory and supplied to a neural network, which is trained to recognize defects. The neural network indicates whether there is a defect in the examined area, and the result is stored in memory, taking into account the position of the area on the web. As the examined areas gradually cover the entire width of the web, conclusive data regarding defects in the examined section is eventually available. However, Leuenberger fails to anticipate the present invention as claimed.

It is well known that in order to support a rejection under 35 U.S.C. §102, the applied reference must teach each and every claimed element. In the present case, independent claim 1 is not anticipated by Leuenberger for at least the reason that Leuenberger fails to disclose each and every claimed element. For example, Leuenberger fails to disclose the step of sorting the data associated with the plurality of detected faults according to a least two parameters included in said data, and representing the plurality of detected faults in an image as a function of the at least two parameters.

In rejecting claim 1, the Office Action asserts that Leuenberger discloses sorting the data associated with the detected faults according to at least two parameters included in the data inasmuch as Leuenberger allegedly discloses storing probability values together with data relating to the position of the area from which the probability signal was generated. This assertion is unfounded for the following reason.

As discussed in column 5, lines 60-65 of Leuenberger, the grayscale signal (i.e., the probability) is read into memory together with data relating to the position of the area from which the signal is derived, and is stored for a period of time required by the camera in order to cover a plurality of lines. Thus, the signals are stored in the memory in storage locations associated with relative positions on the web, so as to correspond to an image as shown in FIG. 3. Accordingly, the display disclosed in Leuenberger merely displays the grayscale values computed for a particular scan point as the camera is moved across the fabric. However, this is not equivalent to sorting data associated with a plurality of detected faults as claimed. To the contrary, the grayscale values, and positional data of Leuenberger does not *need* to be sorted as it is stored in relation to the camera position. Accordingly, Leuenberger fails to anticipate claim 1.

Claims 2-5 depend from independent claim 1. Therefore claims 2-5 are patentably distinguishable over Leuenberger for at least those reasons presented above with respect to claim 1. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-5 under 35 U.S.C. §102.

In paragraph 8, the Office Action rejects claims 7-10, 16 and 17 under 35 U.S.C. §103(a) as allegedly being unpatentable over Leuenberger in view of U.S. Patent No. 5,544,256 to Brecher et al. ("Brecher"). Applicants respectfully traverse this rejection.

It is well known that in order to establish a *prime facie* case of obviousness, three basic criteria must be met. A first of these criteria is that there must be some motivation to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the combination must teach or suggest each and every claimed limitation. In the present case, the rejection of claims 7-10, 16 and 17 in view of the combination of Leuenberger and Brecher is improper for at least the reason that the Office Action fails to establish a *prime facie* case of obviousness as discussed below.

Claim 7, from which claims 8 and 9 depend, defines a method for evaluating faults detected on textile fabrics that includes, in addition to the steps of claim 1, representing the detected faults in an image as a function of at least two selected parameters, wherein the image consists of fields, a class for the faults being associated with each field.

In rejecting claims 7-9, the Office Action asserts that although Leuenberger fails to disclose or suggest representing the plurality of detected faults in an image wherein the image consists of fields as claimed, Brecher discloses a classifying system which discloses said feature. To support this assertion, the Office Action points to Figs. 3 and 7 of Brecher. This assertion is unfounded for the following reason.

As discussed in column 7, line 56-61 and column 10, lines 3-14 of Brecher, Figs. 3 and 7 illustrate part of the fault detecting process, more particularly the grouping of individual pixels into the larger fault clusters. However, these clusters are not equivalent to fault classes. Accordingly, Brecher does not disclose representing a plurality of detected faults in an image as a function of at least two parameters, wherein the image consists of fields, each field being associated with a fault class.

Since Leuenberger and Brecher both fail to disclose or suggest the step of representing the detected faults in an image as claimed, the combination of these two patents cannot possibly disclose or suggest said feature. Therefore, even if one skilled in the art were motivated to combine Leuenberger and Brecher as suggested by the Office Action, the combination would still fail to render claims 7-9 unpatentable for at least the reason that the combination fails to disclose or suggest each and every claimed element.

Independent claim 10 defines a method for classifying faults detected on textile fabrics. The method includes representing the classification of a plurality of detected faults in an image, wherein the image comprises at least two axes representing two selected parameters from a selected set of parameters; and a series of fields which lie in a plane defined by the values of the two selected parameters, the extent of each field characterizing a class of fault.

In rejecting claim 10, the Office Action asserts that the extent of the non-white regions in areas of defects 11 and 12 illustrated by Leuenberger in Fig. 3 represents the field of each defect. Furthermore, the Office Action asserts that Brecher illustrates fields that correspond to different classes in Fig. 7. However, the rejection of claim 10 in view of the combination of Leuenberger and Brecher is improper for at least the reason that the Office Action fails to provide a proper case of *prime facie* obviousness.

First, the assertion that Brecher illustrates fields that correspond to different classes in Fig. 7 is unfounded. As discussed above, Fig. 7 illustrates faults which may be clustered together, not different classes of faults. Second, even if one were to equate the clusters shown in Fig. 7 of Brecher as classes, Brecher fails to disclose or suggest that the series of fields are defined by the values of two selected parameters, the extent of each field characterizing a class of fault as claimed.

Finally, the Office Action fails to provide *any* motivation to combine the teachings of Leuenberger and Brecher. To the contrary, the Office Action merely states that the extent of the non-white regions in Fig. 3 of Leuenberger represents the field of each defect and that Fig. 7 of Brecher illustrates fields that correspond to different classes. Accordingly, the rejection of claim 10 under 35 U.S.C. §103(a) is improper.

Claims 16 and 17 variously depend from independent claim 10. Therefore, claims 16 and 17 are patentably distinguishable over the combination of Leuenberger and Brecher for at least those reasons presented above with respect to claim 10. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 7-10, 16 and 17 under 35 U.S.C. §103(a).

In paragraph 9, the Office Action rejects claims 11-15 under 35 U.S.C. §103(a) as allegedly being unpatentable over Leuenberger in view of Brecher, and further in view of U.S. Patent No. 5,834,639 to Meier et al. ("Meier"). Applicants respectfully traverse this rejection.

In rejecting claims 11-15, the Office Action asserts that because the claimed parameters may be calculated it would have been obvious to represent the classification of the detected faults in an image comprising at least two axes representing the claimed parameters. This assertion is unfounded for the following reasons.

First, as discussed in section 2143.01 of the MPEP, the mere fact that references can be combined or modified does not render the resultant combination or modification obvious unless the prior art also suggests the desirability of the combination/modification. However, the Office Action fails to provide any evidence of the desirability of the proposed modifications to the system of Leuenberger.

Second, even if one were motivated to combine Leuenberger, Brecher and Meier as suggested by the Office Action, the combination would still fail to render claims 11-15 unpatentable for at least the reason that the combination fails to disclose or suggest each and every claimed feature.

Claims 11-15 variously depend from independent claim 10. Accordingly, the method of claims 11-15 includes, among other things, the step of representing the classification of a plurality of detected faults in an image, wherein the image comprises at least two axes representing two selected parameters from the selected set of parameters and a series of fields which lie in a plane defined by the values of the two selected parameters, the extent of each field characterizing a class of fault.

While each of the cited references may individually disclose pieces of the claimed system, the cited references fails to disclose individually or in combination, the claimed invention as a whole. For example, Leuenberger may discloses displaying the probability (in the form of a grayscale value) of a defect in relation to the position of the camera over the fabric. Brecher may discloses clustering individual faults and classifying the resultant cluster, and Meier may discloses displaying a plurality of faults as a function of length and cross section. However, neither Leuenberger, Brecher, nor Meier individually or in combination discloses representing the classification of a plurality of detected faults in an image, wherein the image comprises at least two axes representing two selected parameters and a series of fields wherein the extent of each field characterizes a class of fault as claimed.

Therefore, claims 11-15 are not rendered unpatentable over the combination of Leuenberger, Brecher and Meier. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 11-15 under 34 U.S.C. §103(a).

The application is in condition for allowance. Notice of same is earnestly solicited.
Should the Examiner have any questions regarding this matter, he is invited to call the undersigned at the telephone number provided below.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: Penny L. Caudle
Penny L. Caudle
Registration No. 46,607

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

Date: December 4, 2003